

ABSTRACT OF THE DISCLOSURE

A plasma processing apparatus has a plasma processing chamber having a plasma excitation electrode, a radiofrequency generator connected to the plasma excitation electrode, and a matching circuit for matching the impedance between the plasma processing chamber and the radiofrequency generator. The loss capacitance  $C_{x1}$  at a later time  $t_1$  after delivery is measured between the plasma excitation electrode and ground potential positions which are grounded. The performance is evaluated by whether or not the loss capacitance  $C_{x1}$  is less than 26 times the plasma electrode capacitance  $C_{e1}$  at the later time  $t_1$  between the plasma excitation electrode and a counter electrode which cooperate with each other.